REMARKS

An indication that the drawings as originally filed are acceptable would be appreciated in the next Action.

The rejection of claims 1, 5, 10, 12-14 and 16-24 as being anticipated by Widmer et al (US 6,474,271 – Widmer '271)

Widmer '271 does not anticipate independent claim 1 because it does not disclose the claimed steps of:

> c. mixing the overfire air and the selective reducing agent with the combustion flue gas in the burnout zone at a flue gas temperature above an optimal temperature range for reduction of the nitrogen oxides using the reducing agent, wherein the optimal temperature range is above 1600°F;
>
> d. heating with the combustion flue gas, the overfire air and the droplets or particles of the selective reducing agent to the optimal temperature range;
>
> e. reducing the nitrogen oxides with the selective reducing agent heated to the optimal temperature range, and
>
> f. continuing to increase the temperature of the overfire air and the selective reducing agent beyond the optimal temperature range with the flue gas.

Widmer '271 does not anticipate independent claim 19 because it does not disclose the claimed steps of:

> (c) introducing the overfire air and the selective reducing agent into combustion flue gas in the burnout zone **at a flue gas temperature above 2000 degrees F**;
>
> (d) mixing the overfire air and the selective reducing agent with the combustion flue gas in the burnout zone at a flue gas temperature above an optimal temperature range for reduction of the nitrogen oxides using the reducing agent, wherein the optimal temperature range is above 1600°F;
>
> (e) heating with the combustion flue gas, the overfire air and the droplets or particles of the selective reducing agent to the optimal temperature range;
>
> (f) decreasing the concentration of nitrogen oxides in the flue gas by reducing the nitrogen oxides with the selective reducing agent, and
>
> (g) continuing to increase the temperature of the overfire air and the selective reducing agent beyond the optimal temperature range with the flue gas. (emphasis added)

A temperature limitation has been added to these claims in view of the Response to Arguments presented in the Action. Widmer '271 does not disclose the temperatures at which a reducing agent should be injected into the combustion flue gas and does not suggest that the reducing agent be introduced into flue gases while the flue gases are at a temperature above the optimal temperature for nitrogen oxide reduction. Widmer '271 does not discuss at what temperature a reducing agent should be introduced into the overfire air and thus does not teach the method of claim 1 that includes introducing overfire air and droplets of a reducing agent to flue gas at a high temperature and allowing the flue gas to head the droplets and overfire air to an optimal temperature for reduction, and continuing to heat the droplets beyond the optimal temperature range.

Widmer '271 teaches away from the claimed invention by stating that selective non-catalytic reduction (SNCR) is conventionally performed in a narrow temperature range. Widmer '271, col. 2, lns. 8-16 ("The SNCR process thus requires a delicate balance between the temperature and the chemical agents that are being introduced to reduce the oxides of nitrogen. If the temperature is just a little bit too high, the chemical burning is too fast, thus producing more oxides of nitrogen than it is able to reduce. If the temperature is just a little bit too low, the chemical agent does not burn fast enough, and not enough of the desired species are produced to permit reduction of oxides of nitrogen. In the latter situation, unreacted or partially reacted chemical agents can escape to the exhaust of the combustion system, and can become pollutants themselves."). This disclosure of a conventional practice in Widmer '271 teaches away from the present invention of injected droplets/particles of a reducing agent into hot flue gases that are above an optimal temperature range.

The PTO Final Action identifies Figure 1 of Widmer '271 as showing the temperature relate steps in method claim 1. Contrary to the Action, Figure 1 does not suggest the temperature relate steps, e.g., steps c, d and e, in claim 1. Figure 1 is a graph of the effect of temperature on the selective non-catalytic reduction (SNCR) process. Widmer '271, col. 2, lns. 37-44. Figure 1 does not suggest that droplets of a reducing agent should be introduced at a higher fuel gas temperature than considered optimal for the reducing reaction, as is called for in claim 1.

There is no anticipation because Widmer '271 does not show each and every step of claim 1 and thus does not disclose the same invention as recited in claim 1. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920-21 (Fed. Cir. 1989) ("anticipation" requires that the identical invention be described in a single prior art reference).

The anticipation rejection of claims 5, 10, 11 and 15 should be withdrawn for the same reasons as claim 1, on which these claims depend. Further, Widmer '271 does not teach introducing the selective reducing agent to a flue gas temperature above 2000^0F or to a range above the optimal range of the reduction reaction as is recited in claims 5 and 10.

The rejection of claims 2 to 4, 6 to 9, 12 to 14 and 16 to 24 as being obvious over Widmer '271 is traversed for substantially the same reasons as stated above for claim 1.

Independent claim 15 has been amended to include steps, similar to claim 1, of introducing droplets/particles of a reducing agent into a fuel gas stream at a higher temperature than optimal for reduction and allowing the droplets/particles to flow with the flue gas stream to an optimal temperature range. Accordingly, the grounds for withdrawing the rejection with respect to claim 1 apply to claim 15.

Further, there is not teaching in Widmer '271 that the reducing agent is: in the optimal temperature range for only 0.3 second as recited in claim 2; injected "prior to injecting the overfire air" as recited in claim 7; and injected to an upper portion of the overfire air as recited in claims 9, 17 and 24.

Dependent claims 3 and 4 require small droplets or particles smaller than 50 to 60 microns. In contrast to these dependent claims, Widmer et al. teach injection of uniformly large droplets into a boiler and disclose a specific type of nozzle that provides the large droplets. Widmer et al teach away from the very small droplet injection that is the subject of claims 3 and 4.

All claims are in good condition for allowance. If any small matter remains outstanding, the Examiner is requested to telephone applicants' attorney. Prompt reconsideration and allowance of this application is requested.

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.

Respectfully submitted,

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